

HERNIA OF THE UTERUS THROUGH THE INGUINAL CANAL.¹

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THE following is the report of a case of inguinal hernia of the uterus, with operation and recovery.

H. B., colored, aged twenty-seven years, occupation, housewife; married nine years; has had three children (all living), now aged eight, seven, and three years. No miscarriages; menstruation normal. Patient has had a small, right inguinal hernia as long as she can remember. This was about the size of a walnut, a small, hard, painless protrusion, which always descended when she was upon her feet and disappeared on lying down. It never was observed to be irreducible, and gave her no trouble. A truss had been recommended, but she had never worn one.

On January 20, 1904, one week before admission to the hospital, and while occupied in washing clothes, but not, according to her account, making any especially severe exertion, a large protrusion, much larger than ever before observed, made its appearance in the right groin. Its development was accompanied by severe pain in that region, forcing her to lie down. She remained in bed, the pain becoming more severe. She had neither vomiting nor constipation, and was not aware of the presence of fever, and had no chill.

She was seen by Dr. J. H. Cloud, who sent her to the Bryn Mawr Hospital on January 27, 1904. She was in excellent condition at that time. Examination showed a swelling, half the size of the fist, in the right inguinolabial region, coming from the external abdominal ring; hard, irreducible, somewhat tender, evidently an irreducible, complete, inguinal hernia. The absence of symptoms of obstruction, with her history, made probable the

¹ Read before the Philadelphia Academy of Surgery, March 7, 1904.

diagnosis of omental hernia,—epiplocele. Operation was advised, and consented to, and the patient was admitted about noon of the same day. The temperature on admission was $98.2-5^{\circ}$ F., her pulse and respiration normal. In the evening the temperature was 100° F. Dr. Walter Christie, the physician on duty, also examined her, and concurred in the advisability of operation.

Operation, January 28, Dr. Christie assisting. Under anæsthesia the hernia was again examined and found to be irreducible. No prolonged taxis was attempted. An oblique incision over the neck of the tumor showed it to be pear-shaped, the wider end presenting, the sac adherent at the fundus or peripheral portion, and free at the constricted base. The sac was opened at the latter point and peeled away. The examination of the contents was at first confusing, although we were still under the impression that the bulk of the mass was omentum. While endeavoring to unfold it, it suddenly split longitudinally, and about three-quarters of an ounce of yellow, odorless pus escaped from its interior. This was quickly sponged away, and an ovary was then seen to be protruding from the inguinal canal to the right side of the neck of the mass, and what had been supposed to be a large intestine flattened out by pressure, was found to be the broad ligament and Fallopian tube of the right side. It was then discovered that the herniated mass was the uterus turned over forward, the supravaginal portion running backward, downward, and inward towards the cervix. A vaginal examination determined the continuity of the cervix with the mass, and the examining finger was easily felt through the upper vaginal wall immediately in front of it. The necrotic and infected condition of the body of the uterus forbade its reduction, and it was decided to remove it with the right ovary, which was now prolapsed through the external ring. This was done, after applying a series of silk ligatures to the broad ligaments, tubes, and supravaginal portion of the uterus, which formed the pedicle, and the adherent sac was also cut away. The presence of pus in the cavity of the uterus rendered infection of the wound possible, and it was not deemed advisable to drop back the stump or to open up the inguinal canal and perform the Bassini operation as we had intended. To secure drainage from the possibly infected stump, to exclude it from the peritoneum, and to close, as far as possible, the canal, we decided to fasten the pedicle in the external abdominal ring, and closely sutured the pillars of

the latter with chromicized catgut above, around, and below it. A small gauze wick was then laid over the stump, and the wound closed in its deeper portion by a continuous chromicized gut suture, and the skin with silkworm gut, the gauze being brought out at the lower angle.

After operation the patient's condition was excellent. The temperature in the evening was 98.3-5° F., the pulse 92. The following day, the 29th, a bloody vaginal discharge appeared. The highest temperature recorded after operation was on the evening of the 29th, 100.1-5° F., the pulse 80. The wound was dressed on the 30th, and when the gauze wick was removed, a small quantity of bloody mucus followed it; and again on February 1, when a small rubber tube was inserted instead of the gauze, to drain away the mucus discharging from the stump. This was removed two days later, and the wound quickly healed without infection, being solid, and the stitches removed on the tenth day. The vaginal discharge lessened and disappeared in a few days after operation. The patient complained of some pain across the lower portion of the abdomen after the wound was healed, but this soon disappeared. Menstruation appeared on February 25, was profuse, as usual, and lasted four or five days, with the usual slight pain in the hypogastric region. The patient was allowed to get up after four weeks, and suffered no further inconvenience. An examination made February 29 showed the wound solidly healed, no hernia or unusual impulse on coughing on that side, the stump of the uterus easily palpable by bimanual examination and slightly movable, upward and downward, the cervix being tilted somewhat downward.

Sections through the body of the uterus were made by Dr. W. Bradford Eaton, Pathologist to the Hospital, who very kindly furnished me the following report:

"The section studied was taken from the uterine wall, bordering the large abscess ruptured at time of operation (uterine cavity). The wall was of average thickness, and showed direct evidence of pyogenic infection. The sinuses in places were densely infiltrated with polymorphonuclear leucocytes, and scattered through the specimen were many foci of densely crowded pus-cells. The part of the specimen bordering upon the abscess showed what at first seemed to be a remnant of placental tissue, but which further study showed to be particles of blood-clot that were held by the necrotic

remnants of the endometrium. Here and there could be seen remains of mucous glands and occasional strips of degenerated uterine mucosa. The condition corresponded to that found in intense hæmorrhagic and pyogenic infection, such as was apparently present in this case."

The persistence of menstruation is explained by the fact that the amputation was done some little distance above the internal os, and the left ovary was not removed, although its tube was, of course, tied off with the pedicle. It was not drawn out or observed during the operation.

While the presence of an ovary in the sac of an inguinal hernia is not very uncommon, most operators of large experience having encountered it one or more times, the presence of the uterus is one of the rarest phenomena of hernia. But while of great rarity, its occurrence has not escaped the attention of some of those who have made a special study of hernia and of affections of the female genitalia, and cases of umbilical, ventral, inguinal, crural, and of alleged obturator and ischiatic hernia have been recorded. The ventral forms occur most frequently, being usually situated below the navel, from separation of the recti muscles during pregnancy, and will not be considered here. The cases of other varieties than umbilical and ventral, except inguinal and crural, which are on record, viz., ischiatic and obturator, are probably apocryphal. Careful studies of the cases of inguinal and crural hernia of the uterus which are on record have been made from time to time by Cormack,¹ Klob,² Eisenhart,³ Adams,⁴ Winkel,⁵ and Küstner,⁶ who have compiled lists of the cases, more or less complete. A careful study of these papers shows that considerable confusion exists as to some of the cases in the early literature, both as to their authenticity and their exact nature. Thus the oldest case, that of Nicholas Pol (1531), has been claimed to be identical with one of those mentioned by Senertus and Hildanus (1610), while another described by these authors, and attributed to Doringius, is variously classified as inguinal and crural, or omitted. Another case, given by Skrivan and Lumpe as a true hernia of the pregnant uterus, has been ex-

cluded on the ground that it was an extra-uterine pregnancy. By a study and comparison of these papers and of many of the original references, and a review of the literature since their appearance, the following classification of the cases seems justified. It is practically the same as Küstner's, with the addition of six cases which he excluded, or overlooked, or which have been published since his article appeared. The pregnant uterus has occupied the sac of an inguinal hernia in whole or in part nine times (observations by Pol, Senertus, Saxtorph, Ladesma, Fischer, Rektorzik, Scanzoni, Winckel and Eisenhart, Rosanoff). The non-pregnant uterus has been previously observed in inguinal hernia at least twelve times (Maret, Lallement, Chopart, Olshausen, Leopold, Schwarz, Brohl, Krug, Defontaine, Legueu, Rouffart, and Diederich). Two undisputed cases of crural hernia of the non-pregnant womb have been recorded by Lallement, and Boivin and Dugès, and the case of Doringius previously mentioned, a hernia of the pregnant uterus, has been variously classified as inguinal, crural, or possibly between the muscular fibres of the abdominal wall, or altogether excluded.

The case of F. Krug⁷ has not been included heretofore, Winckel and Küstner, writing since its publication, not mentioning it, but is an undoubted example of hernia of the non-pregnant uterus, left ovary and tube, of the left inguinal variety. The case of De Gouey,⁸ of removal of a foetus from a hernial sac, is, judging from the quaint and interesting account translated from the Sloane Manuscript, apparently an example of extra-uterine gestation, as the much-discussed case of Skri-
van and Lumpe was finally decided to be. Other cases not included in previous statistics are those of Defontaine,⁹ Legueu,¹⁰ Rouffart,¹¹ and Diederich,¹² abstracts of which follow.

The unimpregnated uterus may be congenitally herniated, or the accident may occur in early life, or during or after the child-bearing period, usually when the pregnancies have been multiple and numerous; and the uterus may become impregnated in this condition. The pregnant uterus may also

enter a pre-existing hernia and pregnancy go on until the full term.

The etiology, symptomatology, and diagnosis of this condition have been given at length in the articles quoted, and it is unnecessary to dwell upon all of them. There are, however, several points suggested by the history of our case which are of interest. She was the mother of three children. Multiple pregnancies are an important predisposing factor to hernia of the womb. She had had a small, right inguinal hernia all her life, probably a congenital hernia, and perhaps of the ovary. The presence of a pre-existing hernia is a predisposing factor, and an ovary may be in the sac, and by its traction on the uterus, especially when adherent to the sac, and the latter is increasing in size, aid in drawing the uterus outward. In a relatively large proportion of these cases there are congenital anomalies present, as a rudimentary uterus, bicornute uterus, congenital hernia, imperforate vagina, pseudohermaphroditism, shortening of the round ligament, associated with increased liability to uterine hernia. In pre-existing hernia the sac probably often enlarges at the expense of the broad ligament on that side, making direct traction on the womb. The only organs in the sac were the uterus and its ligaments, the right ovary and tube, and part of the left tube. Both ovaries may accompany the uterus in its excursion, usually only one, that of the side on which the hernia is located. There was no omentum present, adhesion of which to the uterus might have caused its displacement by traction (Chopart's case). The patient was washing clothes when the accident occurred, probably bending over and exerting herself more than she acknowledges. Severe sudden exertion, causing increased intra-abdominal pressure, is an important exciting cause. It is a curious fact that both of Lallement's cases occurred in washerwomen. The uterus was probably practically strangulated, a unique accident. It was necrotic, splitting open under manipulation and discharging pus from its cavity. The microscopic examination also showed inflammatory changes in the tissues of the uterus.

Diagnosis.—No suspicion of the true nature of the contents of the hernia was entertained before operation. The diagnosis made was of probable omental hernia, from the absence of symptoms of intestinal obstruction. The presence of a pyriform mass, hard, perhaps irreducible, would be consistent with the presence of the uterus, and in some cases a smaller round or ovoid movable body alongside of it, the ovary, has been described, and a correct diagnosis arrived at. A vaginal examination before operation would have revealed an absence of the uterus from its normal position, and a change in the direction of the cervix and vagina. As Eisenhart points out, the introduction of a sound is difficult. A painful swelling of the herniated uterus during menstruation has been described. In pregnancy occurring in a herniated uterus, or in one horn of a bicornute uterus, the usual objective signs of pregnancy may be elicited as pregnancy progresses, the uterus meanwhile steadily increasing in size.

Return of the uterus would have been indicated had its condition permitted, but under the circumstances there was no alternative but hysterectomy. The left ovary was not prolapsed, and its removal was unnecessary. Conservation of the pelvic organs as far as possible, at least where functioning, would seem to be indicated.

In addition to the case here reported, operations for hernia of the non-pregnant uterus have been done by Leopold, Schwartz, Brohl, Krug, Defontaine, Legueu, Rouffart, and Diederich. Leopold¹³ successfully excised one horn of a bicornute uterus, with the tube and ovary, from an inguinal hernia. There was an imperforate vagina in his case, as there was also in Schwartz's¹⁴ case, in which there was a double congenital hernia, with failure of union of Müller's ducts, the right hernia containing a "uterus in miniature," which was replaced, the left containing a muscular cord, which was excised. The patient recovered.

Brohl's¹⁵ case was a pseudohermaphrodite of the female sex, thirty-six years old, with a left inguinal hernia of six years' duration, which was correctly diagnosed before opera-

tion to contain the uterus and ovary. He amputated the uterus and both ovaries, one of which was rudimentary, and fastened the stump to Poupart's ligament to close the canal. The uterus was bicornute. This patient also recovered. His treatment of the stump was practically the same as that followed in our case.

Krug⁷ operated on a left inguinal hernia of the uterus and ovary, congenital, the uterus reducible, the ovary adherent, in an unmarried girl aged nineteen years. The hernia had existed as long as she could remember; symptoms for five months only. A correct diagnosis of the contents was made before operation. The sac was apparently formed from the left broad ligament, explaining the irreducibility of the ovary, which was adherent to it. The uterus was reduced, the left tube and ovary removed, and the sac excised; closure by the McBurney method. The patient died fifteen days after operation, apparently of an intense anæmia, with cardiac degeneration; no sepsis. Post-mortem examination showed the right broad ligament exceedingly long, running behind the posterior surface of the uterus, so that the right tube and ovary were on the left side of the uterus.

L. Defontaine⁸ performed radical cure on a hernia, left inguinal, existing for five months, in a child aged seven months. It contained the uterus and both ovaries, being complete of the uterus, and the contents were returned to the abdomen after digital divulsion of the rings.

Leguen¹⁰ reports a case of left inguinal hernia in a girl of eighteen years, congenital, and containing the uterus, which was very small, one ovary, and both malformed Fallopian tubes, one ovary being wanting. The vagina was imperforate. He operated, reduced the organs into the abdomen, and the patient recovered.

Rouffart¹¹ reports a case in a girl aged twenty-two years, with congenital hernia, which for three weeks had been very painful and sensitive. The vagina was imperforate, the other sexual characteristics well developed. On operation the uterus was found rudimentary, apparently unicornute, adherent to the

sac, the left tube and ovary in the abdomen, the right absent. These organs were removed, and the patient recovered. It may be noted that this case is an exception to the almost universal rule that at least one ovary is present in the hernia with the uterus.

Diederich¹² reports a case similar to Rouffart's, in a girl of twenty-one years, also with imperforate vagina, in which the rudimentary uterus, with the left ovary and tube, was removed. The right adnexa were not discovered.

The frequent association of imperforate vagina with a rudimentary congenitally herniated uterus in the cases reported in recent literature is of interest. It is probable that the more frequent performance of operations for radical cure has revealed cases of this nature which were previously assumed to be herniæ of common types.

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